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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/656,613	09/04/2003	Joseph H. Johnson	05-022con/Tank-190con	7994
7590		04/21/2005	EXAMINER	
Boris G. Tankhilevich		QUINTO, KEVIN V		
Law Offices of Boris G. Tankhilevich		ART UNIT		
Suite A		PAPER NUMBER		
536 N. Civic Drive		2826		
Walnut Creek, CA 94596		DATE MAILED: 04/21/2005		

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/656,613	Applicant(s) JOHNSON ET AL.	
	Examiner Kevin Quinto	Art Unit 2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 January 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2-12, 14-19 and 21-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-12, 14-19 and 21-33 is/are allowed.
- 6) ☒ Claim(s) 34 is/are rejected.
- 7) ☒ Claim(s) 35-50 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claim 34 have been considered but are moot in view of the new ground(s) of rejection.

### ***Terminal Disclaimer***

2. The terminal disclaimer filed on January 18, 2005 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of USPN 6,521,923 has been reviewed and is accepted. The terminal disclaimer has been recorded.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 34 is rejected under 35 U.S.C. 102(b) as being anticipated by Malhi (USPN 5,349,207).
5. In reference to claim 34, Malhi (USPN 5,349,207) discloses a similar structure. Figures 4a-4c illustrate a silicon carbide based structure with a silicon carbide substrate (30) and a double bonding layer (40, 42) overlying the silicon carbide substrate (30). A

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single crystal silicon semiconductor material (20) has a top surface. The single crystal silicon semiconductor material (20) overlies the double bonding layer (40, 42). The single crystal silicon semiconductor material (20) is bonded to the silicon carbide substrate (30) via the double bonding layer (40, 42).

6. In reference to claim 34, Malhi (USPN 5,349,207) discloses a similar structure. Figures 5a-5d illustrate a silicon carbide based structure with a silicon carbide substrate (30) and a double bonding layer (54, 56) overlying the silicon carbide substrate (30). A single crystal silicon semiconductor material (20) has a top surface. The single crystal silicon semiconductor material (20) overlies the double bonding layer (54, 56). The single crystal silicon semiconductor material (20) is bonded to the silicon carbide substrate (30) via the double bonding layer (54, 56).

#### ***Allowable Subject Matter***

7. Claims 2-12, 14-19, and 21-33 are allowed.

8. Claims 35-50 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: the examiner is unaware of any prior art which suggests bonding a silicon carbide substrate with a single crystal silicon semiconductor material such that the silicon carbide substrate and the single crystal silicon semiconductor material may have a plurality of layers with different conductivity types.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Quinto whose telephone number is (571) 272-1920. The examiner can normally be reached on M-F 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KVQ

  
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